

IN THE SPECIFICATION

MARKED-UP COPY OF AMENDED SPECIFICATION PARAGRAPHS:

**[0033]** The transport routines that control the functionality of the wafer transfer system 33 and generate the graphic user interface are preferably software stored in memory 67 and are executed by the microprocessor 65. The wafer transport routines or logic are used to perform all operations related to unloading unprocessed wafers 25 from a cassette 49, transferring the unloaded wafers to the prealigner~~71~~ 41, transferring the wafers 25 to the table with pin lift 43 for placement on the wafer carrier 27 and the reverse operations. The wafer transfer software is an integrated set of automation software that views, stores, controls, analyzes and manages the information from the wafer transfer system. The software generates the display screens and shows process information in real-time. The software is preferably operationally compatible with personal computer operating systems such as a MAC OS®, Linux®, Microsoft Windows® or like operating environments.

**[0042]** As described above, the tool bar 103 comprises iconic pushbuttons used to perform auxiliary wafer transport system 33 functions. The buttons are setup 133, ~~option 15~~ options 135, routines 137, security 139, exit 141, command 143, diagnosis 145 and help 147. The setup button 133 accesses interface parameters. The ~~option~~ options button 135 accesses the variables to adjust the antechamber purge times. The routines 137 button provides the ability to perform basic reset and homing functions for the wafer transport robot with all wafer location coordinates. The security button 139 is used to change login status. The exit button 141 is used to exit the wafer transfer software. The command button 143 provides access to the interfaces with the wafer transport robot 39. The command function 143 is used to initialize the wafer transfer robot 39 motions. The diagnosis button 145 provides explanation ~~if~~ in the

event the access ~~the~~ wafer transfer system 33 faults. The help button 147 provides color coding legends for the graphics and general information on the process.

**[0045]** The graphical representations provide the user interface with the wafer transfer system 33. The user places the pointing device 57 over a graphic representing a physical counterpart and selects the graphic or function by clicking or clicking and holding a button on the pointing device (if the pointing device is a mouse or pressing with a finger if a touch display) such as opening or closing a door or selecting a wafer(s) for transfer. Releasing the pointing device button releases a graphical selection. Door position can be indicated by a color change or a modulating color when in travel (as shown in FIG. 5).

**[0046]** The active wafer group bar graphic 153<sub>1</sub>, 153<sub>2</sub> indicates which group of wafers (e.g., five wafers) will be transferred. If a wafer cassette 49 has a capacity of ~~25~~twenty-five wafers, wafer groups are preprogrammed to be selected in groups corresponding to the number of wafer pockets on the carrier 27. The active wafer slot 155<sub>1</sub>, 155<sub>2</sub> graphic indicates the individual wafer slot selected by the user. This graphic indicates which individual wafer 25 will be transferred. In this embodiment, the cassette slot graphic indicates 25 individual positions to provide the status on the wafers stored in a respective slot.

**[0050]** If wafer cassettes 49 have not been loaded, the user verifies that the inner door 59<sub>1</sub>, 59<sub>2</sub> of a desired antechamber 45<sub>1</sub>, 45<sub>2</sub> is closed (step 207), and opens its respective outer door 61<sub>1</sub>, 61<sub>2</sub> (step ~~211~~209) from the display 53 using the pointing device 57 and inner 149<sub>1</sub>, 149<sub>2</sub> and outer 151<sub>1</sub>, 151<sub>2</sub> door graphics. A wafer cassette 49 with a desired number of wafers 25 is manually loaded (step 211) into the antechamber 45<sub>1</sub>, 45<sub>2</sub> by the user and the outer door 61<sub>1</sub>, 61<sub>2</sub> is closed (step 213) from

the user interface 101. After the outer door 61<sub>1</sub>, 61<sub>2</sub> is closed, the antechamber 45<sub>1</sub>, 45<sub>2</sub> is automatically purged (step 215).

[0056] To transfer a single processed wafer or a group of processed wafers from the carrier 27, the user selects a desired processed wafer 25 graphic (step 257) or selects all of the processed wafers by selecting the carrier (step 259). If one wafer 25 is selected, the user drags the selection into a predetermined cassette wafer slot and releases the selection (step 261). If a group of processed wafers are selected, the group is dragged from the carrier graphic 115 to the predetermined cassette wafer slots and released (step 263). After the processed wafers have been graphically transferred, a request to transfer is issued by the wafer transfer software. The software checks if the request is physically safe and allowed. If the operation is allowed, a message confirming the action is posted 111 and the user either accepts or cancels the operation (steps 265, 267). If accepted, the wafer robotic arm 39 performs the physical wafer transfer from the carrier 27 to the cassette. If the operation is not allowed, a message is posted in the message box 113 to inform the user that the requested operation is not allowed and will not be performed. As the wafer robotic arm 39 transfers the processed wafer(s), the display graphic of the arm 119 mimics the motion of the arm until the transfer is completed. If a single processed wafer was transferred, the user inputs for transferring a single wafer are repeated (step 269).

#### IN THE CLAIMS

##### MARKED-UP COPY OF CLAIMS

12. (Amended) The wafer transfer controller according to claim 11, wherein each said antechamber graphic further comprises:

an outer door graphic;

Application No.: 09/997,940

an inner door graphic;  
an area for said wafer cassette graphic; and  
~~and~~ a wafer slot indicator graphic to indicate which wafer slot |  
graphic is selected by said user.

REMARKS

Entry of the foregoing amendment prior to an action on the merits is requested. The Applicants have made various minor changes for clarification and to correct for typographical errors and note that no new matter has been added.

In view of the above, it is respectfully requested that these amendments now be entered, and that prosecution on the merits of this application now be initiated. If, however, for any reason the Examiner does not believe such action can be taken he or she is respectfully requested to telephone applicants' attorney at (908) 654-5000 in order to overcome any additional objections which the Examiner may have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Respectfully submitted,

LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK, LLP



JONATHAN A. DAVID  
Reg. No. 36,494

600 South Avenue West  
Westfield, New Jersey 07090  
Telephone: (908) 654-5000  
Facsimile: (908) 654-7866

348772\_1.DOC